

Profiles of Early Canadian Mathematicians

CSHPM Notes

March 2022 (Vol. 54, No. 2)

David E. Zitarelli (posthumous) (Temple University)

CSHPM Notes bring scholarly work on the history and philosophy of mathematics to the broader mathematics community. Authors are members of the Canadian Society for History and Philosophy of Mathematics (CSHPM). Comments and suggestions are welcome; they may be directed to either of the column's co-editors:

Amy Ackerberg-Hastings, *Independent Scholar* (aackerbe@verizon.net)

Hardy Grant, *York University [retired]* (hardygrant@yahoo.com)

Editors' Note: When he died in December 2018, long-time CSHPM member David Zitarelli left behind manuscript material for a people-centered perspective on how mathematics teaching and research has unfolded in the United States and Canada from the arrival of Europeans to the near-present day. David's genuine enthusiasm for individuals and his fascination with how individuals come together to form organizations and communities both made him a beloved colleague and shaped the way he understood the past. Below, we offer his profiles of a few Canadian mathematicians, via excerpts from the material in volume 1, which covers the period 1492–1900 and is [now available](#) from the MAA Press imprint of the AMS. Volume 2 of what was intended as a three-volume work will appear in fall 2022; it will cover the period 1901–1940. We thank Stephen F. Kennedy and Della Dumbaugh, who have been editing David's manuscripts for publication, for their assistance with this column.

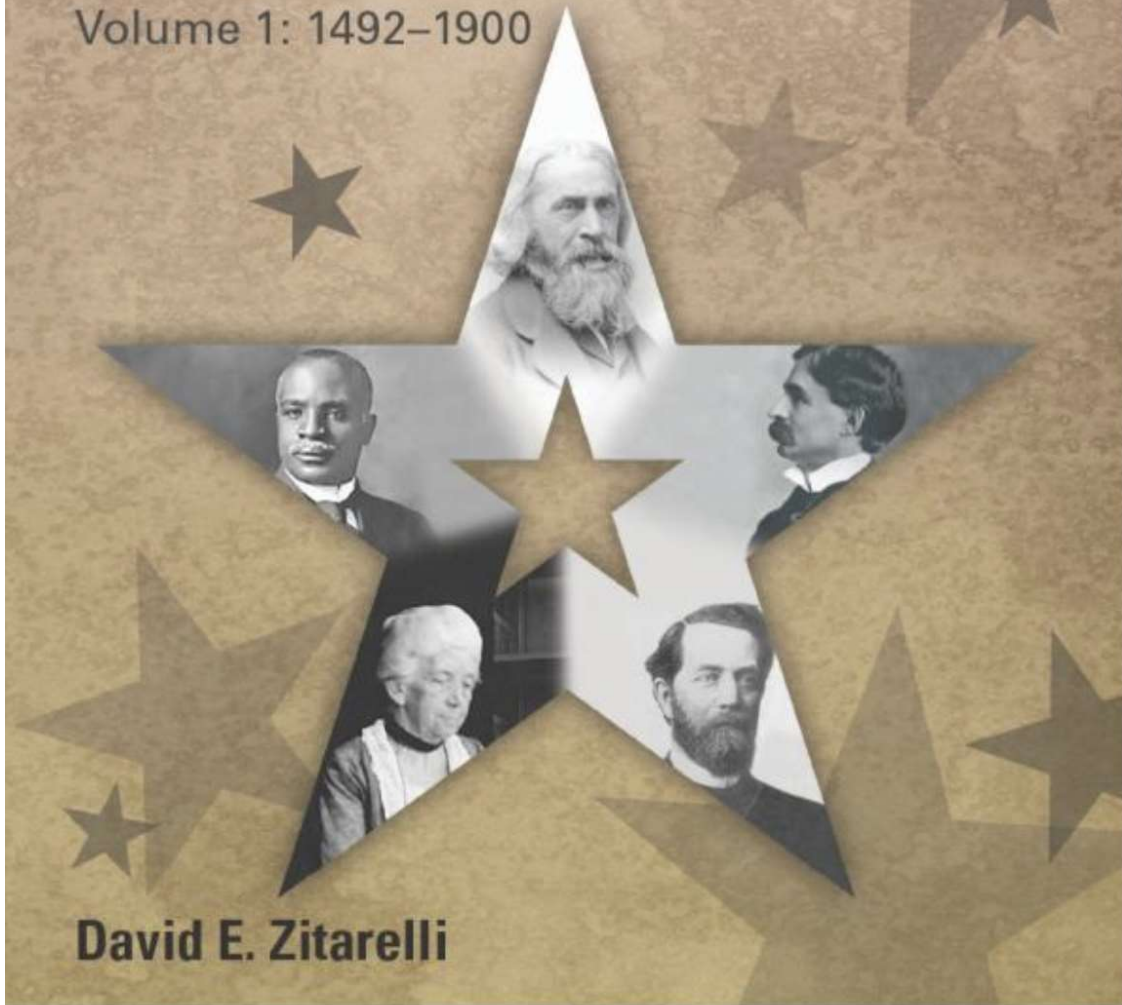
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VOL 94

A History of Mathematics in the United States and Canada

Volume 1: 1492–1900



David E. Zitarelli



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Figure 1. The cover of Zitarelli's *A History of Mathematics in the United States and Canada*, vol. 1. AMS/MAA Press.

The first mathematics professor at the Collège de Québec [in existence from 1635 to 1760] was the Frenchman Martin Boutet de Saint-Martin (ca. 1612–1683), who sailed to Canada in 1645 with his wife and two daughters. Except for a return trip to France in 1677 to accept an honor decreed by King Louis XIV, he spent the rest of his life in Quebec City. Virtually nothing is known about his years in France, including his education. . . . In 1661 Boutet began offering mathematics courses . . . that were oriented toward two important aspects of life along the Saint Lawrence River, surveying and navigation. The Collège's main mission was training for the priesthood, however, so mathematics instruction was not emphasized. One of Boutet's earliest students was Louis Jolliet (ca. 1645–1700), the Canadian explorer known for mapping the Mississippi River. . . . About 1666 [Boutet] was asked to extend his courses beyond the Collège to include the training of pilots for navigating the Saint Lawrence River. As the historians Thomas Archibald and Louis Charbonneau observed, "Besides the chronic shortage of navigators, there was also the need for accurate maps. Once again the natural choice to provide such training was Boutet" [1, p. 3; 2, p. 6]



Figure 2. Collège de Québec buildings, as painted by Richard Short in 1761. [Archives de la Ville de Québec](#), N016369.

The Rev. Robert Murray (ca. 1795–1853) was a graduate of the University of Glasgow, and was ordained a minister of the Church of Scotland. During 1824–1834, he was master of the Edinburgh Commercial and Mathematical Academy, publishing a very successful textbook on commercial arithmetic that was later reprinted in Upper Canada. He immigrated to Canada in 1836 to become a minister of the Church of Scotland in Oakville, ON. Six years later he was appointed Canada's first assistant superintendent of education, but for political reasons he was removed from this post in 1844. [Richard] Potter's convenient resignation [from the University of Toronto] that year enabled the Upper Canada governor to appoint Murray as professor of mathematics and natural philosophy. Unfortunately, little is known of Murray's life from this point except that he died in 1853 after a prolonged illness. Nonetheless, Murray made a very good choice for his assistant in 1850 when he chose John Bradford Cherriman (1823–1908). . . . Cherriman published many papers during his 25 years in Toronto, mostly in mathematical analysis and applications to the social sciences. . . . Although mathematics was his main interest, the professorship required him to teach the physical sciences (heat, optics, electricity, magnetism, mechanics, hydrostatics, pneumatics, acoustics, and astronomy) even though there were no laboratories for demonstrations at the time. Cherriman left the university in 1875 to assume a federal position as an actuary with the Canadian government in Ottawa [2, p. 152].

NEW SYSTEM

1831

OF

COMMERCIAL ARITHMETIC,

OR

GUIDE TO BUSINESS AND SCIENCE;

FOR THE USE OF SCHOOLS.

IN WHICH THE PRINCIPLES OF THE RULES, AND THE REASONS OF
THE OPERATIONS ARE FULLY EXPLAINED;

ALSO,

Containing a Copious Selection of Questions, affording the means of Minute
Examination on the Principles and Application of the Rules.

BY ROBERT MURRAY,

MASTER OF THE COMMERCIAL AND MATHEMATICAL ACADEMY,
10, NICOLSON STREET, EDINBURGH.

EDINBURGH:

JOHN BOYD, 37, GEORGE STREET.

M. OGLE, AND W. COLLINS, GLASGOW; J. DEWAR, PERTH; E. DONALDSON,
DUNDEE; A. WATSON, AND J. KILO, ABERDEEN; K. DOUGLAS, INVER-
NESS; JOHN SINCLAIR, DUMFRIES; JOHN DICK, AYR; J. M. LECKIE,
DUBLIN; SIMPKIN & MARSHALL, AND WHITTAKER & CO. LONDON.

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Figure 3. Title page from Murray's 1830 *New System of Commercial Arithmetic*. [GoogleBooks](#).

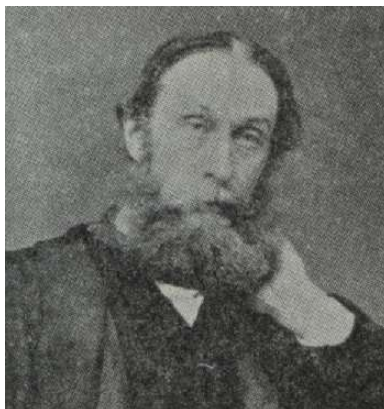


Figure 4. Cherriman also served as head of the [Meteorological Service of Canada](#) from 1853 to 1855.

William Henry Metzler (1863–1943) received his PhD [from Clark University] in June 1893. After teaching at MIT and Genesee Wesleyan (NY) 1892–1895, he accepted a professorship at Syracuse University. Initially, he produced an impressive array of papers on determinants and quaternions; two others appeared in the *Proceedings of the London Mathematical Society*. [He] then switched gears to education, becoming a prominent researcher in the field and establishing *The Mathematics Teacher* as a quarterly publication of the Association of Mathematics Teachers of the Middle States and Maryland in 1908. . . . Thomas Franklin Holgate (1859–1945), a Canadian and a University of Toronto graduate like Metzler, was a mathematics instructor at Albert College in Ontario before accepting his Clark fellowship. He moved to Northwestern University in 1893, two years before officially receiving his Clark doctorate. He was a particularly active contributor to mathematics on the national scene, one of five professors who made Chicago one of the focal points of the emerging AMS along with New York City. . . . [He] was devoted to Northwestern throughout his career, serving as interim president on two occasions and as dean of the faculty. In the latter position, he spent the year 1921–1922 at the University of Nanking in China lecturing on mathematics but, more importantly on the international scene, assisting in the general organization of that university. Holgate's text *Projective Pure Geometry* (1930) was highly regarded [2, p. 308].



Figure 5. Metzler ca 1890. [MacTutor](#).



Figure 6. Holgate also served as president of Northwestern from 1904 to 1906 and 1916 to 1919. [Northwestern University Archives](#).

The Canadian-born William Gillespie (1870–1947) enrolled in the Chicago graduate program in 1893 upon graduation from the University of Toronto. He left after four years without a degree to accept an instructorship at Princeton, but he completed his dissertation under Oskar Bolza while carrying out his teaching duties. He was promoted to preceptor (assistant professor) in 1905 and to full professor six years later. Gillespie spent the rest of his career as a minor player on the Princeton stage until his retirement in 1939 [3]. Like Gillespie, John Hector McDonald (1874–1953) was a Canadian and a University of Toronto graduate (1895). He entered Chicago the following year. His 1900 dissertation reads, "I feel under a deep obligation to all the teachers named, but particularly to Professors [E. H.] Moore and Bolza for the continued and varied assistance which they gave me throughout my whole term of graduate study." McDonald joined [Derrick Norman] Lehmer at Berkeley in 1902 and remained there for the rest of his life [2, pp. 354–355].

Mathematics Genealogy Project

John Hector McDonald

[MathSciNet](#)

Ph.D. The University of Chicago 1900 

Dissertation: *Concerning the System of the Binary Cubic and Quadratic with Application to the Reduction of Hyperelliptic Integrals to Elliptic Integrals by a Transformation of Order Four*

Advisor: [Oskar Bolza](#)

Students:

Click [here](#) to see the students ordered by family name.

Name	School	Year	Descendants
Sznyter, Mary	University of California, Berkeley	1918	
McFarland, Elsie	University of California, Berkeley	1920	
Saund, Dalip	University of California, Berkeley	1924	
Terami, Takashi	University of California, Berkeley	1925	
Trjitzinsky, Waldemar	University of California, Berkeley	1926	61
Reimer, Edward	University of California, Berkeley	1927	
Shaghoian, Armenag	University of California, Berkeley	1927	
Brady, Dorothy	University of California, Berkeley	1933	10
Ma, Shun	University of California, Berkeley	1934	
Rauch, Louis	University of California, Berkeley	1935	
Robinson, Raphael	University of California, Berkeley	1935	1
Cowan, Russell	University of California, Berkeley	1936	6
Wakerling, ex Wood, Orla	University of California, Berkeley	1940	
Arnold, Elizabeth	University of California, Berkeley	1941	

Figure 7. McDonald mentored five women PhDs at Berkeley. [Mathematics Genealogy Project](#).

[1]Archibald, Thomas, and Louis Charbonneau. (1995) Mathematics in Canada before 1945: A preliminary survey, in *Mathematics in Canada*, edited by Peter Fillmore, vol. 1, 1–90. Ottawa: Canadian Mathematical Society. Reprinted (2005) in *Mathematics and the Historian's Craft: The Kenneth O. May Lectures*, edited by Glen Van Brummelen and Michael Kinyon, 141–182. *CMS Books in Mathematics*. New York: Springer.

[2]Zitarelli, David E. (2019) *A History of Mathematics in the United States and Canada*. Vol. 1. Providence, RI: American Mathematical Society.

[3]Zitarelli, David E. (n.d.) Supplementary materials for *A History of Mathematics in the United States and Canada*.
<https://davidzitarelli.wordpress.com/a-history-of-mathematics-in-the-united-states-and-canada/> (accessed 20 January 2022).

Email Zitarelli's editors: skennedy@amsbooks.org

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